

COMPUTATIONAL FLUID DYNAMICS (CFD)

(FLOW-3D, Flow Science, Inc.)

Jim Higgs, M.S., Hydraulic Engineer, D-8560, (303) 445-2147

Joe Kubitschek, M.S., Hydraulic Engineer, D-8560, (303) 445-2148

- **2 & 3-DIMENSIONAL NUMERICAL MODELING.**
- **Development of numerical models in conjunction with physical models to further understand complicated fluid-flow applications including:**
 - Fish Passage Structures.
 - Fish Screen Structures.
 - Hydraulic Structures.
 - Hydraulic Equipment.
- **Methods used for:**
 - Concept Development.
 - Extension of Physical Model Results.
 - Design Analysis/Evaluation.
 - Field Evaluation.
- **Example:**
 - **Tracy Experimental Test Facility (TFTF)** – CFD modeling used in combination with laboratory physical modeling to evaluate proposed conceptual designs.
 - Results to be used with newly developed fish behavior model to predict fish response to various hydraulic structures (screens, louvers, separators, bypasses, etc...)

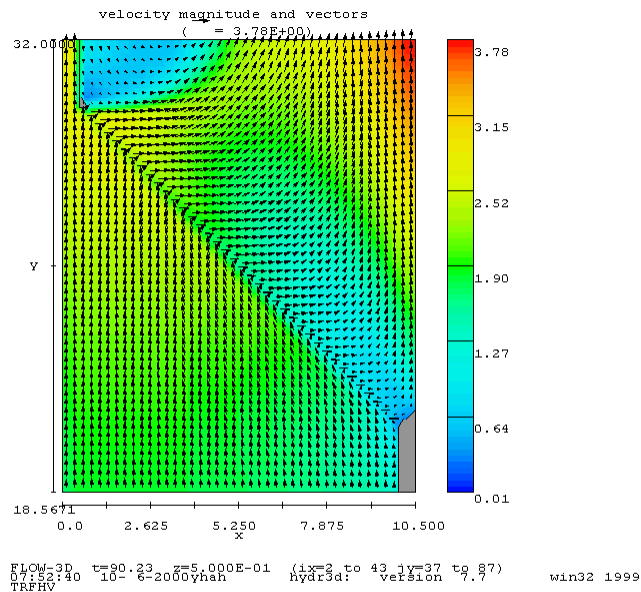


Figure 1. - Two-dimensional velocity field for flow through a louver structure.